



# Healthcare associated *Clostridioides difficile* infection in surgical and medical patients

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## Background and importance

*Clostridioides difficile* (*C. difficile*) infection (CDI) is one of the most common healthcare-associated (HA) infections in contemporary medicine. The risk factors (RFs) for HA CDI in medical and surgical patients are poorly investigated in countries with a limited resource healthcare system.

## Aim and objectives

The aim of this study was to investigate differences in patients' characteristics and RFs associated with HA CDI in surgical and medical patients.

## Materials and methods

A prospective cohort study was conducted including adults patients diagnosed with initial episode of HA CDI from 2011 to 2017 in 1200-bed teaching hospital. Patients hospitalized for any non-surgical illness, who developed initial HA CDI were assigned to medical group, whereas those who developed initial HA CDI after surgical procedures were in surgical group. Data about use of proton pump inhibitors (PPIs), chemotherapy and antibiotic usage were gathered by hospital pharmacists.

## Results

From 553 patients diagnosed with HA CDI, 268 (48.5%) and 285 (51.5%) were surgical and medical patients, respectively. Medical patients were significantly older than surgical ones ( $68.59 \pm 15.46$  vs.  $64.91 \pm 14.86$ ,  $p=0.005$ ); were treated significantly more frequently with PPIs (38.9% vs. 19%,  $p<0.001$ ), fluoroquinolones (28.6% vs. 9.9%,  $p<0.001$ ) and chemotherapy (12.6% vs. 1.9%,  $p<0.001$ ). Admission to intensive care unit (ICU) was significantly more frequently in surgical patients (35.4% vs. 10.9%,  $p<0.001$ ) as well as use of second- and third- generation cephalosporins (30.0% vs. 17.6%,  $p=0.001$ ; 64.6% vs. 53.1%,  $p=0.007$ , respectively).

## Conclusion and relevance

Age  $\geq 65$  years, use of PPIs, chemotherapy and fluoroquinolones were positively associated with medical group and were significant predictors of CDI for them, whereas admission to ICU and use of second- and third-generation cephalosporins were positively associated with being in surgical group and were significant predictors of CDI in that group. It can be concluded that medical patients were more endangered with HA CDI than surgical ones.

**References:** Perić A, Dragojević- Simić V, Milenković B, et al. Antibiotic consumption and healthcare-associated infections in a tertiary hospital in Belgrade, Serbia from 2011 to 2016. *J Infect Dev Ctries.* 2018;12(10):855-863.

Šuljagić V, Miljković I, Starčević S, et al. Risk factors for *Clostridioides difficile* infection in surgical patients hospitalized in a tertiary hospital in Belgrade, Serbia: case-control study. *Antimicrob Resist Infect Control.* 2017;6:31

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